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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/026,400	02/19/1998	SATOSHI MORI	2185-0226P-S	1711

2292 7590 01/13/2003

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EXAMINER

NELSON, AMY J

ART UNIT	PAPER NUMBER
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1638

DATE MAILED: 01/13/2003

23

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.  
09/026,400

Applicant(s)  
Satoshi Mori, et al.

Examiner  
Amy Nelson

Art Unit  
1638



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 10/15/01 and 2/14/02.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 2-11 and 13-21 is/are pending in the application.
- 4a) Of the above, claim(s) 14-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-11, 13, and 21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some\* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_ 6) ☐ Other:

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### **DETAILED ACTION**

1. This application contains claims 14-20 drawn to an invention nonelected with traverse in Paper No. 10, filed 7/26/99. A complete reply to the final rejection must include cancelation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.
2. The Sequence Listing filed 10/15/01 has been entered.
3. In order to perfect the claim to foreign priority, Applicant is requested to provide an English translation of the Japan Patent 9-37499.

#### ***Claim Rejections - 35 USC § 112***

4. Claims 2, and 5-11, and 13 remain rejected and Claim 21 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This rejection is repeated for the reasons of record as set forth in the last Official action mailed 5/15/01. Applicant's arguments filed 10/15/01 have been fully considered but they are not persuasive.

Applicant asserts that Applicant has amended the claims to recite highly stringent hybridization and wash conditions, hence limiting the scope of the claimed invention to a genus of sequences that is adequately described. Applicant provides as evidence that the conditions are high stringency, an excerpt from Sambrook's Molecular Cloning, Table 11.1, which shows

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successful cloning of genes under hybridization conditions of 0.98-1.2 M NaCl and 42-48°C.

Applicant asserts that these conditions are much less stringent than the conditions recited in the instant claims, namely 5X SSPE and 65°C (response, p. 9-10).

Examiner responds that Table presented by Applicant does not state that the recited conditions are high stringency conditions. Many different conditions are used for gene isolation, but that does not define the conditions as high stringency conditions. Moreover, it is the combination of hybridization conditions and wash conditions that determines the stringency of the conditions, and hence the percent identity of the sequences that will remain bound to the probe sequence. It is noted that Table 11.1 is a table depicting library screening with guessmers, which are short highly conserved regions found in related gene members. Hence, the evidence in the table is irrelevant to Applicant's description of a genus of DNA sequences encoding nicotianamine aminotransferase, wherein applicant is attempting to claim a genus of sequences with overall relatedness to the full length sequence, and wherein Applicant does not disclose a highly conserved region that is unique to nicotianamine aminotransferases.

Here, Applicant describes two cDNA sequences from barley encoding nicotianamine aminotransferase (SEQ ID NO:3 and 4). Applicant does not describe the composition or structure of other nucleic acids encoding nicotianamine aminotransferase encompassed by the claims. In order to fulfill the written description requirements, Applicant need either describe a representative number of the claimed genus, or describe structural features of the claimed genus

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that are unique to the genus of sequences. Applicant has done neither, and hence Applicant has not provided an adequate written description of the claimed invention.

5. Claims 2, and 5-11, 13 remain rejected and Claim 21 is rejected under 35 U.S.C. 112, first paragraph, because the specification is enabling only for claims limited to a DNA encoding the nicotianamine aminotransferase of SEQ ID NO:1 and 2, vectors, transformed plant and bacterial cells, and transgenic plants comprising said DNA, as well as a method of enhancing iron absorbing ability of a plant cell with said DNA. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims. This rejection is repeated for the reasons of record as set forth in the last Official action mailed 5/15/01. Applicant has not specifically responded to this rejection in the response filed 10/15/01, and therefore the rejection is maintained. Applicant's arguments with respect to the written description rejection are addressed above.

6. Claims 2-11, 13, and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. This rejection is in part repeated for the reasons of record set forth in the Official action mailed 5/15/01, and in part in view of Applicant's amendments to the claims.

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At Claim 2, lines 2-3, Claim 5, lines 2-3, Claim 6, lines 4-5, Claim 7, lines 5-6, Claim 11, lines 9-10, Claim 13, lines 4-5, Claim 21, lines 2-3, the phrase “encoding ... and having nicotianamine aminotransferase activity” renders the claim indefinite. The phrase appears to describe the nucleotide sequence, however nucleotide sequences do not have enzyme activity. Appropriate correction is required.

At Claim 11, lines 2-3 and 4-5, the phrase “iron making use of mugineic acid compound” is indefinite. Applicant asserts that mugeneic acid compounds act to solubilize iron by forming chelate complex with the iron (response, p. 11). Hence, it is recommended that the phrase be amended to recite --iron using mugineic acid compound to solubilize the iron--.

At Claim 13, line 2, “the nucleic acid sequence of the nicotianamine aminotransferase” lacks proper antecedent basis. The claim depends from Claim 11 which recites only “nucleic acid” and “nucleotide sequence.” Appropriate correction is required.

### ***Conclusion***

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after

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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amy J. Nelson whose telephone number is (703) 306-3218. The examiner can normally be reached on Monday-Friday from 8:30 AM - 5:00 PM.

The fax phone number for this Group is (703) 308-4242 or (703) 305-3014.

Any inquiry of a general nature or relating to the status of this application, or if the examiner cannot be reached as indicated above, should be directed to the legal analyst, Gwendolyn Payne, whose telephone number is (703) 305-2475.



**AMY J. NELSON, PH.D**  
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**TECHNOLOGY CENTER 1600**

Amy J. Nelson, Ph.D.

December 31, 2002